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NPIC/R-111/62
July 1962

PHOTOGRAPHIC INTERPRETATION REPORT

HARDENED OR SEMIHARDENED ICBM LAUNCH AREAS IN THE USSR

ARMY NAVY AIR FORCE

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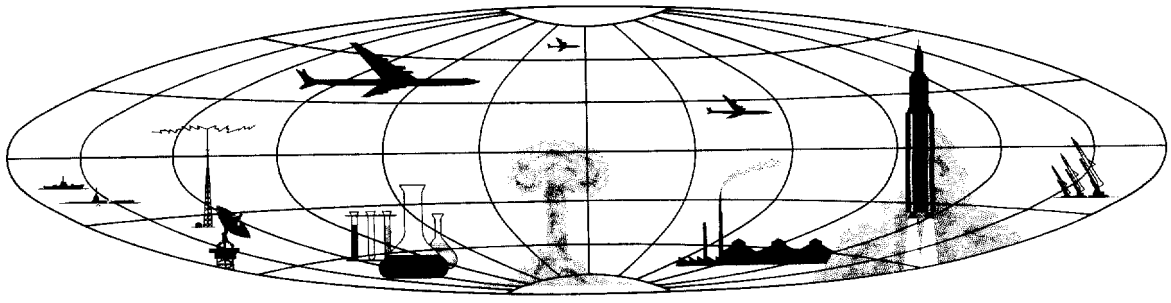

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NOTICE

Examination of more recent photo coverage of Launch Complex D at the Tyura Tam Missile Test Center since this report went to press indicates that the Soviets may be developing a silo system.* For the latest description of construction activity at this complex as well as for NPIC PI evaluations thereof see [redacted] page 5. Additional information on this problem will be published in a subsequent report.

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* The Navy Element at this time reserves its opinion as to whether or not the construction activity to which reference is made indicates the development of a silo system.

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HARDENED OR SEMIHARDENED ICBM LAUNCH AREAS IN THE USSR

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This report, based on KEYHOLE photography through Mission [redacted], presents an analysis of construction activity and a comparison of seven excavations at five deployed Soviet ICBM launch complexes and two at the Tyura Tam Missile Test Center (Figure 1). The two excavations at Tyura Tam are in Launch Areas 1D and 2D of Launch Complex D. The others are in the following deployed ICBM launch complexes: Verkhnyaya Salda, 2 (Areas F and G); Shadrinsk, 2 (Areas A and B); Plesetsk, one (Area C); Kostroma, one (Area E); and Yur'ya, one (Area E). Photography of all other known ICBM launch complexes, as well as of the Kapustin Yar/Vladimirovka Missile Test Center, was searched for similar excavations, but none were identified.

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These nine excavations in various stages of construction at the six locations indicate that hardened or semihardened missile launch facilities are being constructed. [redacted] However, from study to date, structures and objects located within the excavations do not support a specific method of missile handling or orientation. Study of available material does not indicate any structures or excavations of a type expected to be associated with silo construction, but the extent and quality of photography are such that silo construction or some other configuration cannot be completely eliminated from consideration.

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*The SIO, Army Detachment, NPIC, believes that this statement should read "...indicate that missiles probably will be placed..."

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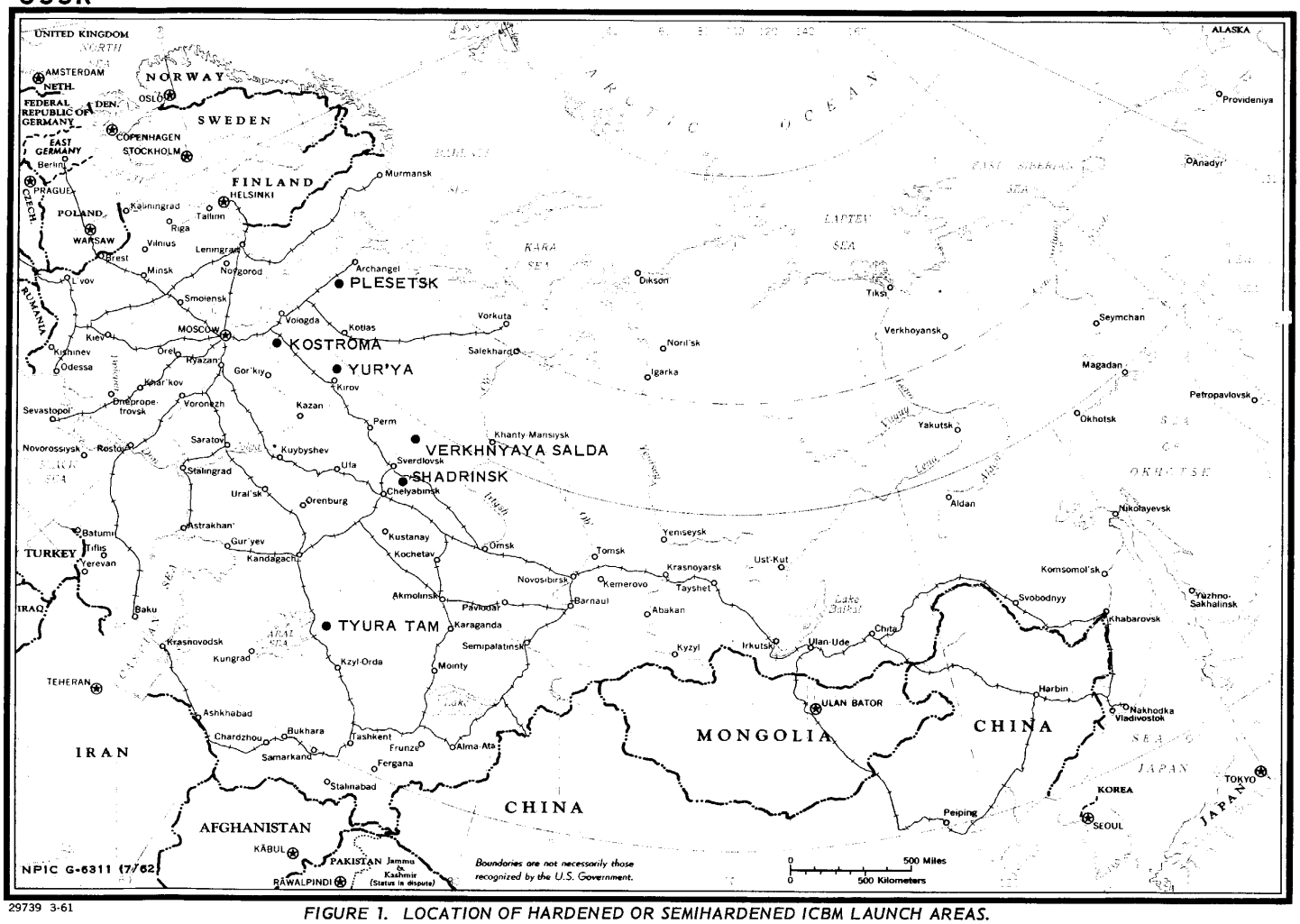

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FIGURE 1. LOCATION OF HARDENED OR SEMIHARDENED ICBM LAUNCH AREAS.

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All the excavations have nearly the same configuration -- a modified T shape. Also, where the whole excavation can be measured, the sizes are fairly consistent, variations probably being due to differences in soil types. Figure 2 is a simplified drawing showing the configuration and size of three excavations that were photographed at nearly the same stage of construction (although not all at the same time). Figures 3-11 consist of drawings and photographs of all nine of the launch areas showing the layout and facilities at each as of the date of coverage indicated.

The long, nearly rectangular portion of the excavations appears to be 20-30 feet deep, judging by nearby objects. The stem appears shallower, and, where its position can be determined, is opposite the downrange side of the excavation. The deeper part of the excavations is more than twice the area of a regulation football field. No determination has been made of the ultimate size of any structures observed in the excavations. In one case, an unidentified structure, 120 by 85 feet, was observed in the stem in Verkhnyaya Salda Area F. In almost every case, the terrain slopes

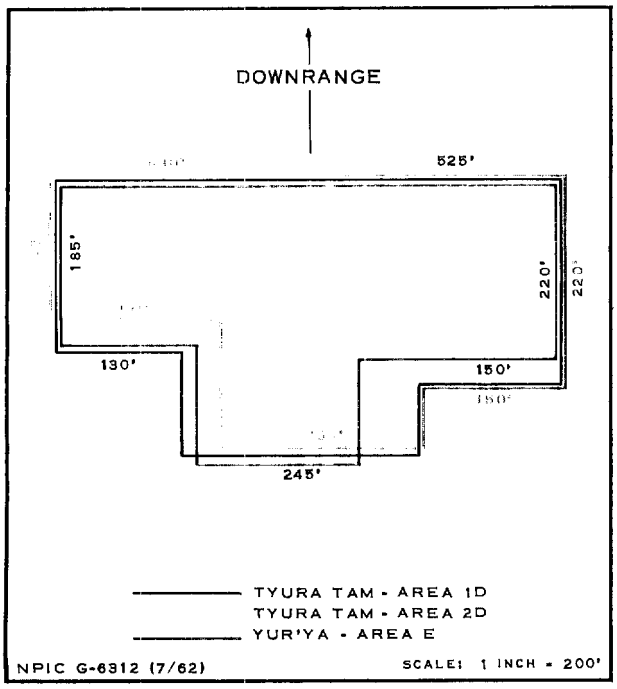

FIGURE 2. PLAN VIEW OF THREE EXCAVATIONS.

FIGURE 3. LAUNCH AREA 1D AT TYURA TAM IN EARLY STAGE OF CONSTRUCTION

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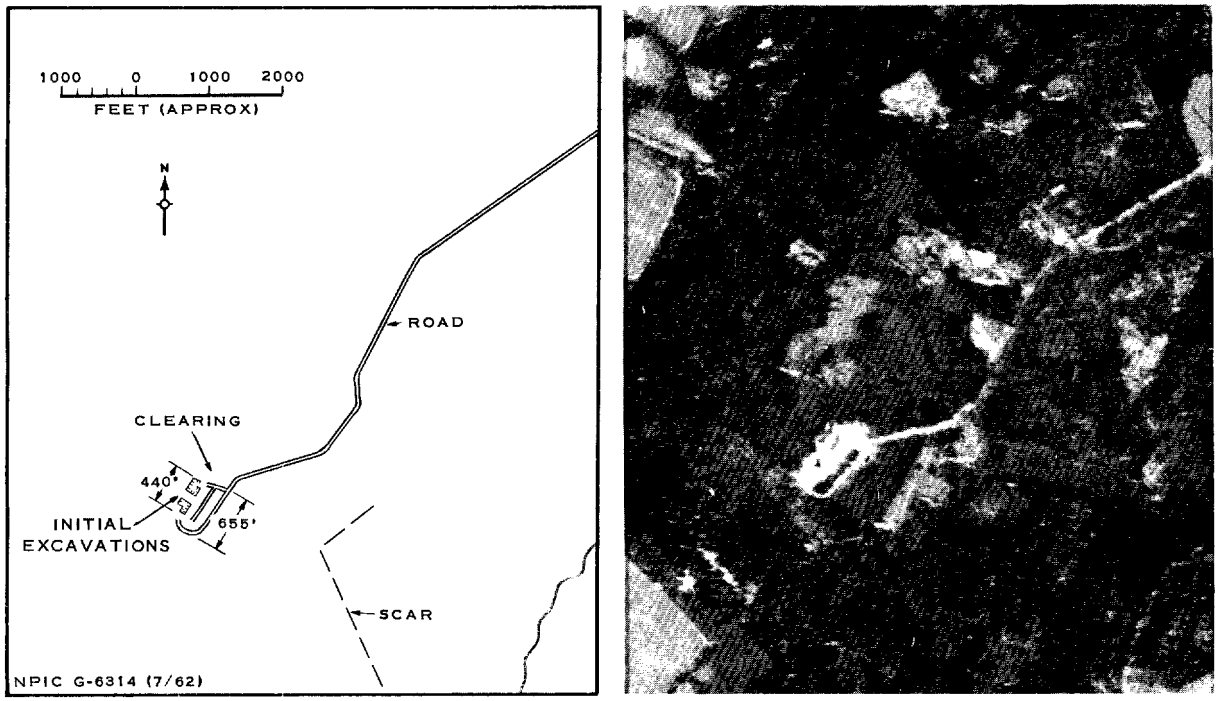

FIGURE 4. KOSTROMA LAUNCH AREA E [redacted] 25X1D

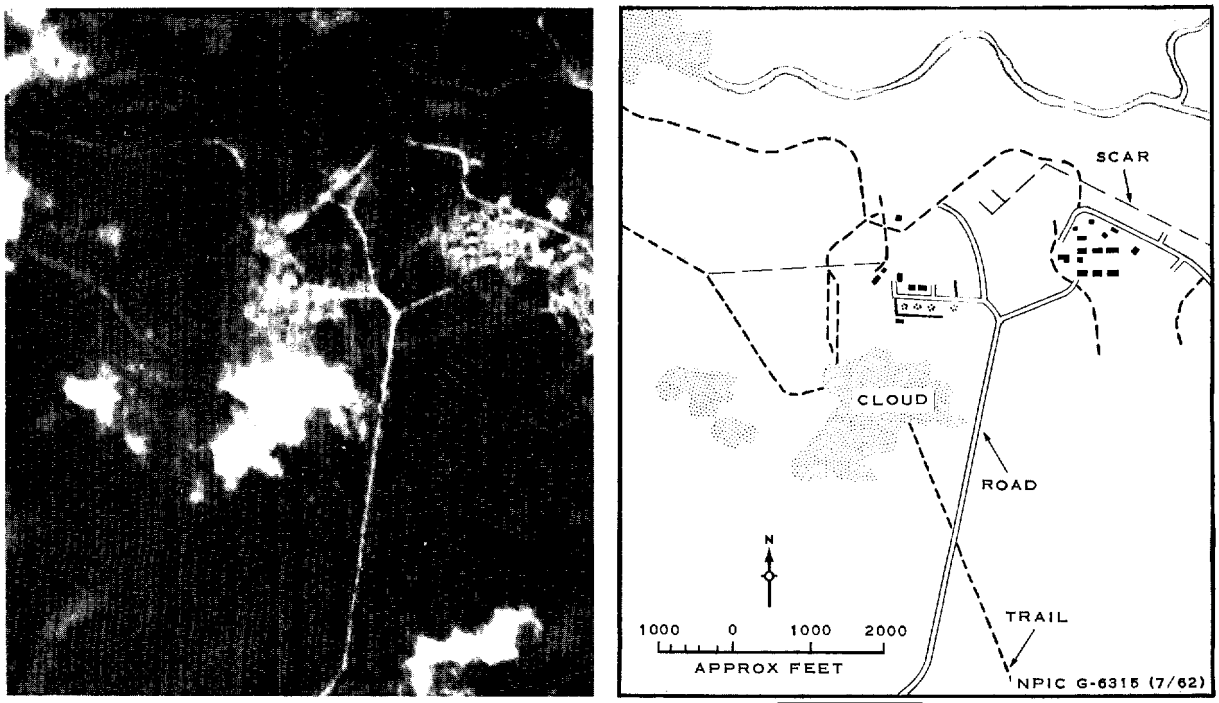

FIGURE 5. PLESETSK LAUNCH AREA C [redacted]

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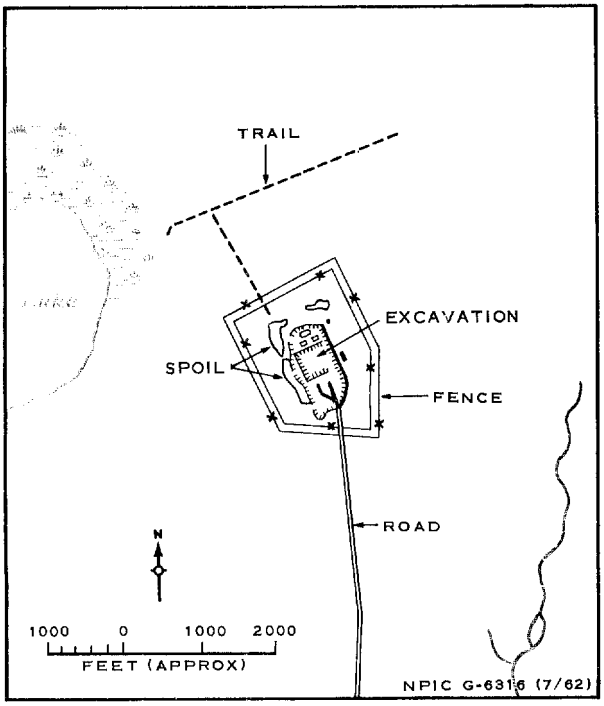

FIGURE 6. SHADRINSK LAUNCH AREA A [redacted] 25X1D

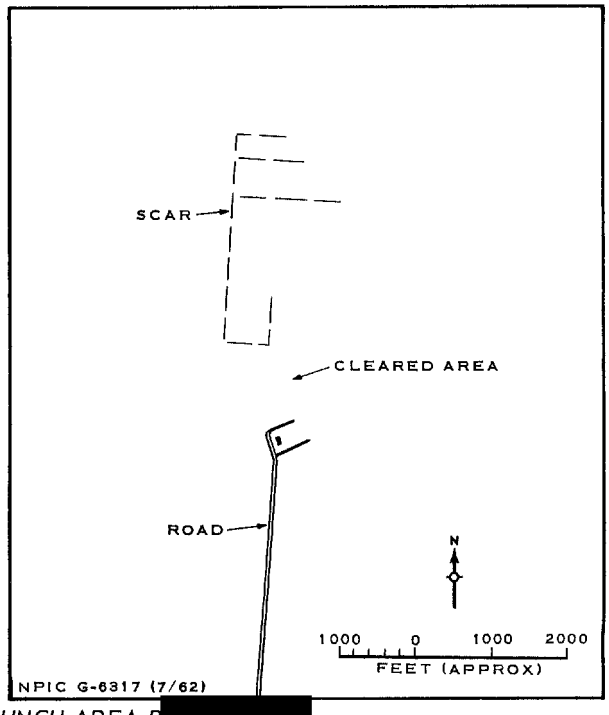

FIGURE 7. SHADRINSK LAUNCH AREA B [redacted] 25X1D

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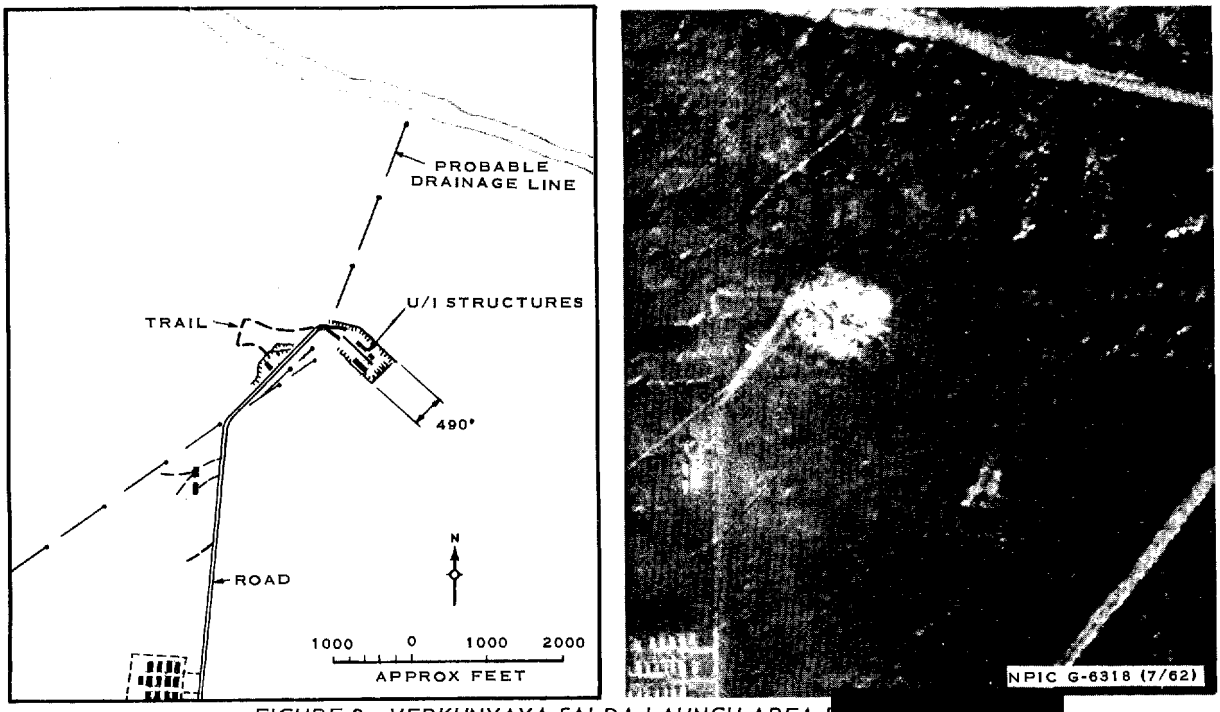

FIGURE 8. VERKHNYAYA SALDA LAUNCH AREA [redacted] 25X1D

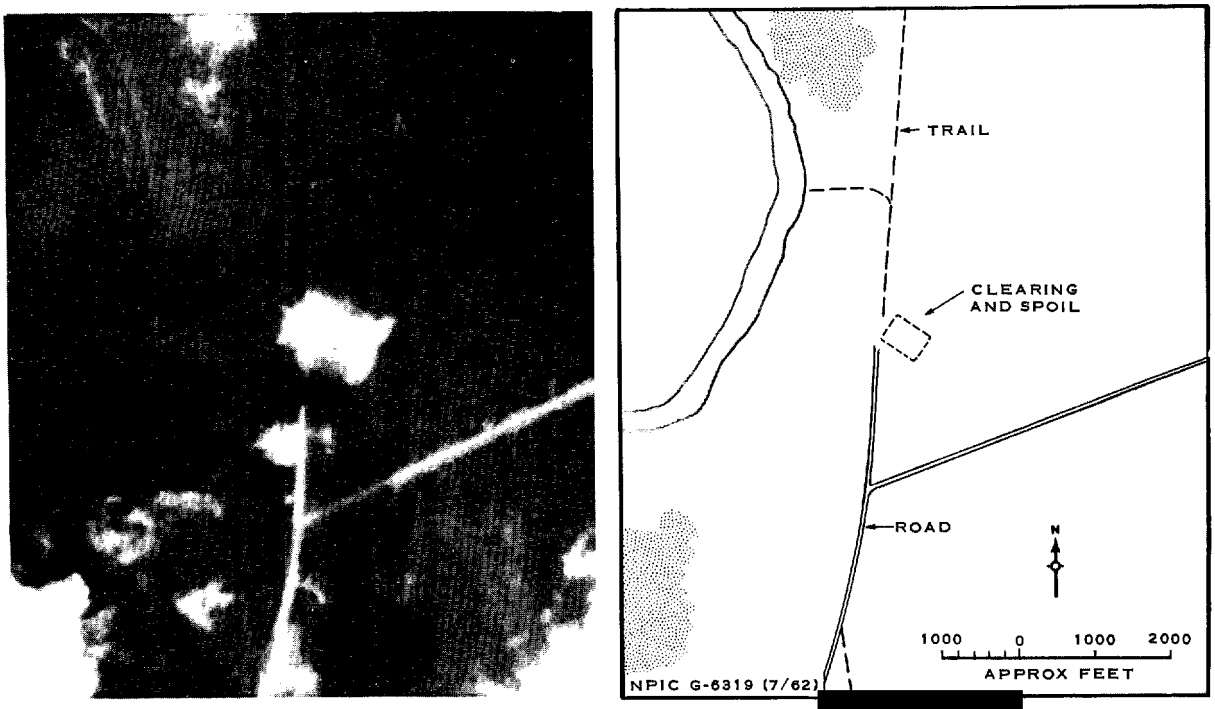

FIGURE 9. VERKHNYAYA SALDA LAUNCH AREA [redacted]

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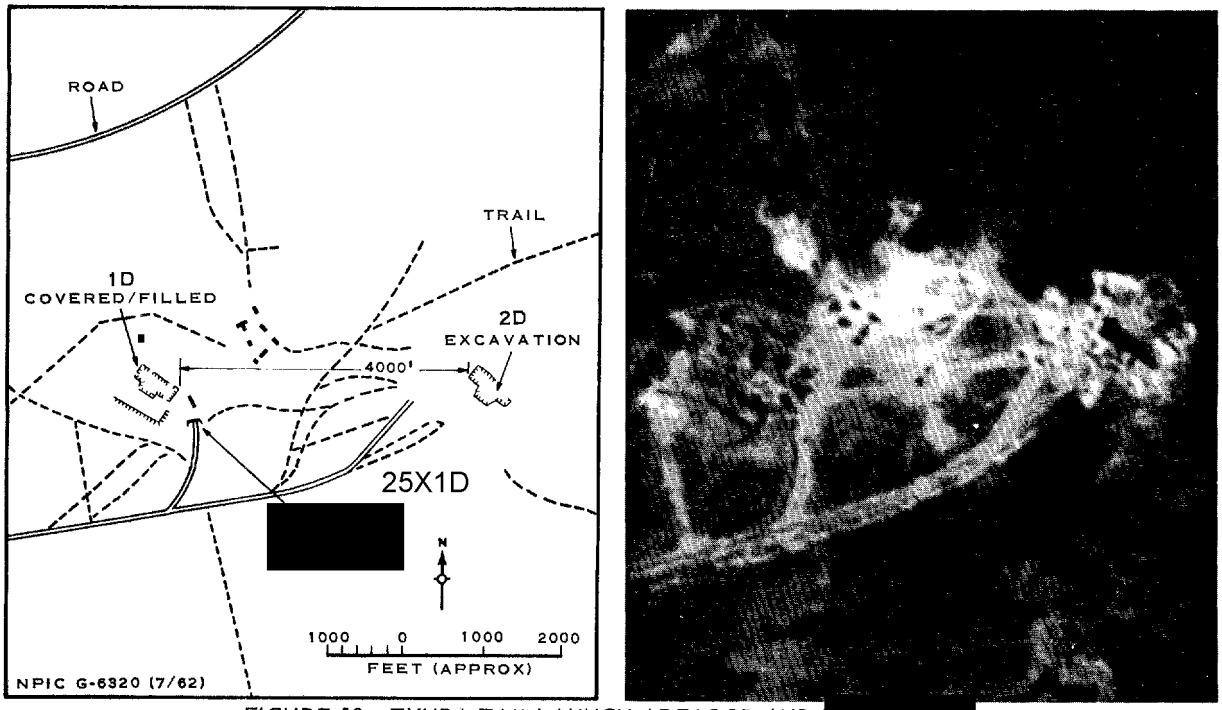

FIGURE 10. TYURA TAM LAUNCH AREAS 1D AND [redacted].

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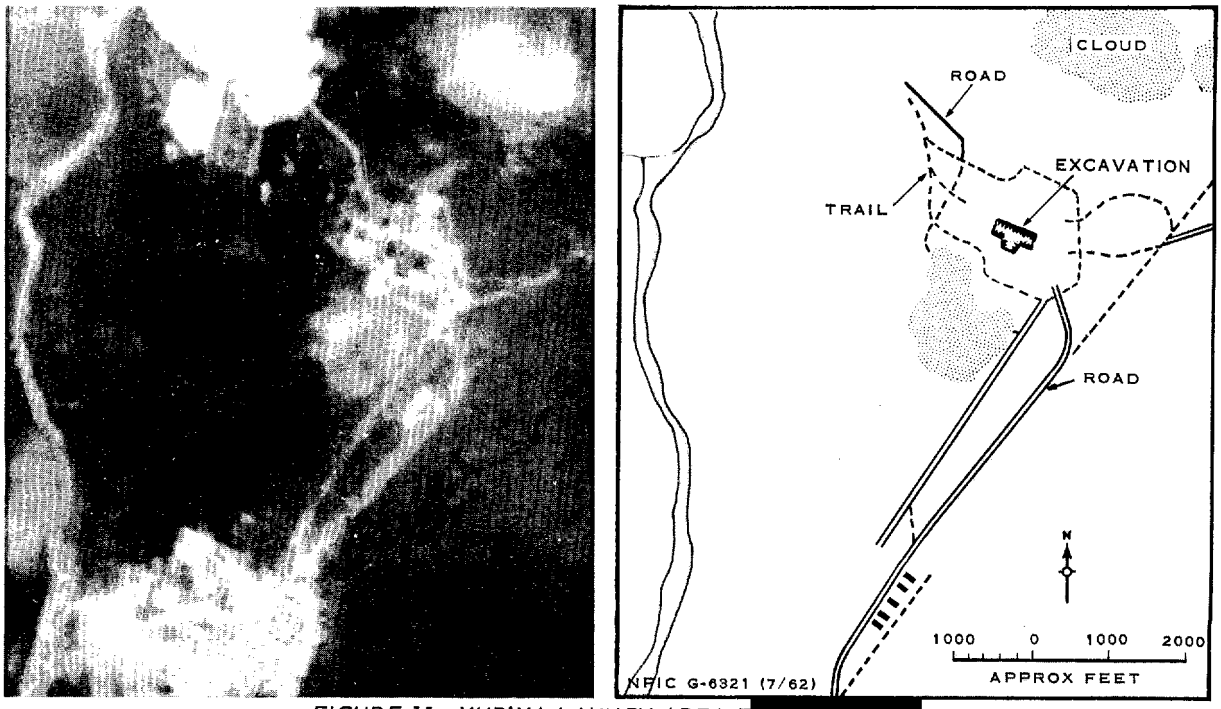

FIGURE 11. YUR'YA LAUNCH AREA E [redacted]

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away from the excavation in the downrange direction. Of the nine areas, Tyura Tam Area 1D and Plesetsk Area C are the farthest advanced in construction. No well-defined signature of a completed launch area of this type has yet been determined.

In Launch Areas 1D and 2D at Tyura Tam, the long axis of each excavation is at a 90-degree angle to the terminal range facilities. As shown in Table 1, at none of the seven deployed areas is the long axis of the excavation at a 90-degree angle to the azimuth of the nearest Yur'ya-type launch area.

The access road to at least five launch areas enters from the right side (the downrange side being taken as the front). Judging by three well-defined excavations (Figures 6,10, and 11), the access road will enter the head of the T at the wide end.

At Tyura Tam Area 1D, a possible underground vehicle entrance is visible along the access road. No counterpart to this feature is discernible at any of the other excavations.

Because of poor image detail in many cases, dimensions given are only approximate and should be used with caution.

Table 1. Data on Hardened or Semihardened ICBM Launch Areas in the USSR

Area	Location	Azimuth (± 5) of Short Axis	Azimuth (± 5) of Nearest Yur'ya-Type Area	Mission on Which First Appears	Estimated Construction Stage on Latest Coverage
Kostroma Area E	57-57N 41-13E	300°	295°	[redacted]	
Plesetsk Area C	63-01N 40-52E	10°	345°		
Shadrinsk Area A	56-09N 63-52N	60°	---		
Shadrinsk Area B	56-10N 64-03E	60°	---		
Tyura Tam Area 1D	45-59N 63-59E	40°	---		
Tyura Tam Area 2D	45-59N 63-59E	40°	---		
Verkhnyaya Salda Area F	58-14N 60-41E	45°	350°		
Verkhnyaya Salda Area G	58-13N 60-49E	45°	350°		
Yur'ya Area E	59-22N 49-17E	20°	340°		

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REFERENCES

PHOTOGRAPHY

Mission	Date	Pass	Camera	Frames	Classification
[redacted]					

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REQUIREMENT

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